

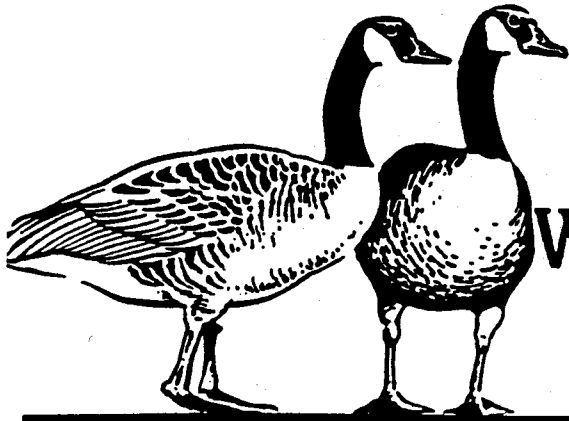


ILLINOIS

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

PRODUCTION NOTE

University of Illinois at
Urbana-Champaign Library
Large-scale Digitization Project, 2007.



WATERFOWL PROGRAM

ILLINOIS DEPARTMENT OF CONSERVATION

DIVISION OF WILDLIFE RESOURCES

CANADA GOOSE HARVEST AND HUNTER ACTIVITY IN THE SOUTHERN ILLINOIS QUOTA ZONE DURING THE 1991 SEASON

Richard M. Whitton, Waterfowl Project Manager

Abstract: The 1991 4-County Southern Illinois Quota Zone goose hunting season opened 9 November and closed 31 January. This coincided with the opening of the southern zone for duck hunting. The established season length was 84 days (70 days in 1990) or when a quota of 72,400 geese was harvested. A total of 26,403 Canada geese was harvested or approximately 36% of the quota. The daily bag limit was 3 Canada geese per day for the entire season. Commercial clubs harvested 80% of the total harvest or 21,040 Canada geese. Goose hunters in Williamson/Jackson Counties accounted for 52% (13,727) of the total quota zone harvest, while 27% (7,026) occurred in Alexander County and 21% (5,650) in Union County. Commercial licenses were issued to 127 clubs in the quota zone. Goose hunters spent 70,210 days afield (13% less than 1990), and averaged 0.38 goose per trip (0.39 in 1990). Commercial clubs in Williamson/Jackson Counties reported the highest success rates (0.52). Commercial clubs in Union and Alexander Counties reported success rates of 0.46 and 0.38, respectively. A total of 1,062 Canada geese was harvested by 3,571 hunters on the Union County Public Hunting Area. Goose hunters (1,005) on the Horseshoe Lake Public Hunting Area harvested 164 geese, and 3,049 hunters harvested 711 geese on the public hunting area at Crab Orchard NWR. Success rates for each of the three public hunting areas were 0.30, 0.16, and 0.23, respectively. The 1991 mid-December MVP Canada goose count in the quota zone and Mississippi Flyway was 280,400 (342,000 in 1990) and 785,050 (939,700 in 1990), respectively. The major migration (400,000) of geese occurred during the period of 4-10 December. The population peaked at 350,000 (540,000 in 1990) in the quota zone on 24 December. The peak wintering population in southern Illinois and western Kentucky was also recorded on 24 December (583,000) (820,000 in 1990). Tail fans (n=2,652) collected from commercial pickers in Alexander, Union, and Williamson/Jackson Counties revealed an age ratio of 0.95 immatures/adult (0.53:1 in 1990). Horseshoe Lake Conservation Area accounted for 27% (6.9 million) of the goose use-days in southern Illinois. Crab Orchard NWR accounted for 26% (6.5 million), and Union County Conservation Area recorded 18% (4.5 million) of the

goose use-days. Goose use-days on the wintering refuges in southern Illinois and western Kentucky decreased from 35.6 million in 1990-91 to 25.7 million in 1991-92. No significant losses of waterfowl to disease were observed on the wintering refuges in southern Illinois in 1991-92.

INTRODUCTION

Alexander, Jackson, Union, and Williamson counties comprise the 4-County Southern Illinois Quota Zone. Located in this region are three major Canada goose wintering areas. The most important wintering area is the Horseshoe Lake Conservation Area in Alexander County. The area contains 7,900 acres and encompasses an ancient oxbow of the Mississippi River. Approximately 30 miles north of Horseshoe Lake is the 6,200 acre Union County Conservation Area. The northern-most wintering refuge in the 4-county zone is Crab Orchard National Wildlife Refuge. This area (44,000 acres) is approximately 35 miles northeast of Union County Conservation Area in Jackson and Williamson counties.

The quota zone system requires that all goose hunters hunting on licensed areas register and report their harvest daily. All commercial clubs (those receiving compensation for goose hunting) are required to apply for a license at a cost of \$15.00 per blind or pit. This system of hunter registration is recognized as one of the most intensive, efficient, and accurate methods of monitoring Canada goose harvest in areas where both geese and hunting pressure are heavily concentrated. The quota zone system has been in effect in southern Illinois since 1960 with only minor changes made in regulations through the years. Approximately 80% of the quota zone goose harvest in 1991 occurred on land licensed to commercial clubs.

Goose hunting regulations in the quota zone were amended in 1987 to allow three persons to occupy a pit or blind for taking or attempting to take Canada geese on commercial clubs. In the past, the number of hunters was restricted to two, except in those blinds where a licensed guide accompanied the hunters. Guide licensing by the Department of Conservation was eliminated as part of the 1987 legislation change.

METHODS AND MATERIALS

All landowners applying for a commercial goose license in the quota zone received a registration packet containing daily registration sheets, club permits, administrative orders and self-addressed envelopes. Commercial clubs submitted daily harvest sheets weekly throughout the season, and the zone harvest was updated at each interval by Union County field office personnel.

All procedures in 1991 were the same as in 1990, including methods of estimating harvest and hunting pressure on outlying non-commercial areas by using the mean percent harvest occurring on those areas in past years (Thornburg and Estel 1983).

An automatic answering machine was maintained in the phone system at the Union County Refuge office. Harvest information and results of the most recent aerial inventories were updated weekly as new information became available. Goose hunters, club operators and media representatives were able to get immediate information on the progress of the 1991 quota zone goose hunting season.

Canada goose populations on wintering areas in the quota zone, Rend Lake and Ballard County, Kentucky were monitored by aerial inventories starting 15 October and ending 5 February. Flights were conducted at weekly intervals, weather permitting. Biologists with the DOC and the USFWS conducted the inventories using the state's Cessna 210 or 337.

RESULTS AND DISCUSSION

The 1991 quota zone goose hunting season opened 9 November and closed 84 days later on 31 January. This coincided with the opening of the southern zone for duck hunting which allowed hunters to harvest ducks and geese. The assigned harvest quota increased 2% from 71,100 in 1990 to 72,400 in 1991. Season length increased from 70 days in 1990 to 84 days in 1991 (Table 1). The daily bag limit was 3 Canada geese per day for the entire season. Canada geese arrived on schedule at southern Illinois wintering refuges during the week of 18-23 September. The first major migration of geese from Wisconsin occurred during the period of 4-10 December when the population increased from 97,400 to 464,250 in southern Illinois and western Kentucky. The major migration was in progress during the survey which was conducted on 4 December. Aerial inventories revealed that the Canada goose population in the quota zone and southern Illinois continued to increase for the next two weeks. The population finally peaked at 350,000 (540,000 in 1990) in the quota zone on 24 December. The peak wintering population in southern Illinois and western Kentucky (583,000) was also recorded on 24 December (820,000 in 1990). The final harvest of 26,403 was 45,997 geese below the assigned quota of 72,400. However, the goose harvest in the quota zone in 1991 was the seventh highest harvest since 1974. However, the success rate in 1991 was the second lowest recorded since 1974. Approximately 36% of the harvest quota was achieved in the 4-County Quota Zone.

Hunting Pressure

Goose hunters spent a total of 70,210 days afield during the 1991 season which was 13% less than 1990 (Figure 1). A total of

38,741 hunters registered at commercial clubs in 1991 (14% less than in 1990). An additional 7,625 hunters registered on the public hunting areas at Horseshoe Lake, Union County and Crab Orchard NWR (15% less than 1990). An estimated 23,844 hunter-trips occurred on non-commercial areas in 1991 (11% less than in 1990) (Whitton 1992). The average daily number of hunters in 1991 (836) was significantly less than 1990 (1,156), however season length was 14 days longer.

Commercial licenses were issued to 127 clubs in the quota zone in 1991 (2% greater than in 1990). Commercial clubs were the most numerous in Williamson/Jackson Counties (65), while clubs in Alexander and Union Counties numbered 42 and 20, respectively.

Williamson/Jackson Counties reported 39% of the hunter-trips on commercial clubs. Approximately 37% of the hunter-trips on commercial clubs occurred in Alexander County and 24% in Union County. Williamson/Jackson Counties had the greatest number of total hunter-trips (38,145) (10% less than 1990) in the quota zone with 54%, followed by Alexander County 27% (18,792) (17% less than 1990) and Union County 19% (13,273) (17% less than 1990) (Table 2).

Hunter use and harvest on the public hunting areas in the quota zone are included in the commercial club totals. These areas accounted for 16% (1% less than 1990) of the hunting effort on commercial clubs in 1991. A total of 7,625 hunters registered on the three public hunting areas (15% less than 1990). Union County Public Hunting Area accounted for the most hunters (3,571). This represented 47% of the total hunting effort on public hunting areas in the quota zone. The Crab Orchard NWR and Horseshoe Lake Public Hunting Areas registered 3,049 (40%) and 1,005 hunters (13%), respectively (Table 3).

Harvest

A total of 26,403 Canada geese was harvested in the quota zone during the 1991 season (16% less than 1990). This was 45,997 geese below the assigned harvest quota of 72,400. Commercial clubs harvested 80% of the total harvest or 21,040 Canada geese (Figure 2). Approximately 44% of the total harvest on commercial clubs occurred in Williamson/Jackson Counties (9,266), 31% in Alexander County (6,604) and 25% in Union County (5,170).

Public hunting areas reported a harvest of 1,937 geese in 1991 (20% less than 1990). The Union County Public Hunting Area reported 55% of the harvest (1,062), while 37% occurred at Crab Orchard NWR Public Hunting Area (711) and 8% at Horseshoe Lake Public Hunting Area (164) (Table 3). The contribution of the Canada goose harvest on public hunting areas in the quota zone represented 9% (1% less than 1990) of the total commercial club harvest.

The 1991 goose harvest on the Union County Public Hunting Area (1,062) was 2% less than the 1985-89, 5-year average and 28% less than the harvest in 1990. The goose harvest at Horseshoe Lake Public Hunting Area in 1991 (164) was 61% less than the 1985-89, 5-year average and 11% less than the harvest in 1990 (Table 4). The goose harvest at Horseshoe Lake in 1991 was the second lowest since 1982. Despite hunting a total of 81 days at Horseshoe Lake in 1991, the most ever, the harvest and success rate continue to be very low.

The average daily goose harvest for the 1991 season was 314 geese per day. This was 30% less than in 1990 (447) and 58% less than 1989 (757). The greatest harvest occurred during the 7-day reporting period 7-13 December, when 3,711 geese were harvested. The lowest harvest (809) occurred during the 7-day reporting period 16-22 November (Table 5).

Williamson/Jackson Counties harvested 52% (13,727) of the total goose harvest in 1991. Union County followed with 21% (5,650) and Alexander County 27% (7,026) (Table 6).

The estimated harvest on non-commercial lands in 1991 was 5,363 Canada geese or 20% of the total geese harvested. Approximately 83% of the harvest occurred in Williamson/Jackson Counties (4,461). Nine percent occurred in Union County (480) and 8% in Alexander County (422).

Hunter Success

Success rates for Canada goose hunters on commercial clubs in the quota zone decreased from .46 goose per trip in 1990 to .45 in 1991 (Table 7). Commercial clubs in the quota zone in 1991 reported some of the lowest success rates since 1987. Commercial clubs in Williamson/Jackson Counties reported the highest success rates (.52), while commercial clubs in Union and Alexander Counties reported success rates of .46 and .38, respectively (Figure 3). Success rates on commercial clubs in 1991 were 18% below the 1986-90, 5-year average (.55).

The Union County Public Hunting Area reported the highest success rate (.30) during 1991 (Table 8). The public hunting areas at Crab Orchard NWR and Horseshoe Lake each reported success rates of .23 and .16, respectively (Table 9).

Population Status

Canada geese arrived on schedule in southern Illinois during the week of 18-23 September. The first aerial inventory was conducted on 15 October and revealed that 43,650 (28,575 in 1990) were present in southern Illinois and western Kentucky. The population remained near 43,000 until 13 November when 61,000 geese

were inventoried. A total of 34,300 Canada geese were present in the quota zone by opening day (9 November). The major, late winter migration occurred during the week of 4-10 December when the population in southern Illinois and western Kentucky increased from 97,400 to 464,250 (Table 10, Figure 4). The goose population in southern Illinois and western Kentucky surged weekly from 10 December to 24 December when the population finally peaked at 583,000 (820,000 in 1990-91). The population peaked in the quota zone in 1990 at 350,000 (540,000 in 1990) (Figure 5). An unusually early winter migration occurred during the week of 5-10 January when large flocks of Canada geese were observed migrating north to spring staging areas. The aerial survey conducted on 10 January confirmed that 283,300 Canada geese departed southern Illinois and western Kentucky. The goose population decreased from a peak of 583,000 on 24 December to 299,700 on 10 January. A return of winter like conditions on the spring staging areas in central Illinois forced many geese to return to the traditional wintering refuges in southern Illinois. The aerial survey conducted on 21 January confirmed the southward migration of geese when the population increased to 442,100 in southern Illinois and western Kentucky. The population decreased weekly thereafter, and the final aerial survey revealed that 347,400 Canada geese were present in southern Illinois and western Kentucky on 5 February.

Canada goose numbers at Horseshoe Lake peaked at 145,000 in 1991-92 (220,000 in 1990-91). Union County Refuge and Crab Orchard NWR reported peaks of 90,000 (145,000 in 1990-91) and 152,000 (150,000 in 1990-91), respectively (Figure 6).

The 1991 mid-December MVP goose survey in the quota zone and Mississippi Flyway was 280,400 (342,000 in 1990) and 785,050 geese (939,700 in 1990), respectively.

Analysis of tail fans collected throughout the quota zone confirmed that production in 1991 was about average, but a significant improvement from 1990. Tail fans collected from commercial pickers in 1991-92 (n=2,652) in Alexander, Union and Williamson Counties revealed an age ratio of 0.95 immatures per adult (0.53 in 1990 and 1.5 in 1989) (Table 11). Tail fans analyzed from geese harvested at Union County and Horseshoe Lake Public Hunting Areas (n=1,226) revealed age ratios of 1.43 and 1.05 immatures per adult, respectively (Table 12). Age ratios from the Union County and Horseshoe Lake Public Hunting Areas in 1991 were significantly below the long-term average (Table 13). Collectively, tail fans (n=3,878) revealed an age ratio of 1.07 immatures per adult (0.55 in 1990).

Goose use-days (GUD) and percent totals at 5 refuges in southern Illinois and western Kentucky are shown in Table 14. In 1991-92, Horseshoe Lake accounted for 6.9 million GUD (9.6 million in 1990-91) (27% of the total); Crab Orchard NWR had 6.5 million GUD (8.5 million GUD in 1990-91) (26% of the total); Rend Lake had

5.8 million GUD (7.3 million GUD in 1990-91) (23% of the total); Union County Refuge had 4.5 million GUD (6.6 million GUD in 1990-91) (18% of the total); and Ballard County, Kentucky accounted for 1.8 million GUD (3.7 million in 1990-91) (7% of the total). Goose use-days in southern Illinois and western Kentucky decreased from 38 million in 1989-90 to 35.9 million in 1990-91 to 25.7 million in 1991-92 (28% less than 1990-91). Individual refuges reported significant changes in the number of goose use-days from 1990 to 1991. Goose use-days in 1991-92 decreased 18%, 31% and 32% at Horseshoe Lake, Crab Orchard NWR and Union County Refuge, respectively. Goose use-days at Rend Lake and Ballard County, Kentucky decreased 20% and 51%, respectively.

No significant or detectable disease losses of waterfowl were observed on the wintering refuges in southern Illinois in 1991-92.

CONCLUSIONS

Unusually mild weather and lack of significant snowfall and ice cover across the entire state throughout much of the fall and winter widely dispersed Canada geese and reduced concentrations at the traditional staging and wintering areas. Aerial inventories revealed that peak Canada goose populations (583,000) (820,000 in 1990-91) and goose use-days (25.7 million) (35.9 million in 1990-91) decreased on the wintering refuges in southern Illinois and western Kentucky in 1991-92.

The 1991 Illinois Waterfowl Hunter Questionnaire Survey revealed a statewide harvest estimate of 95,749 Canada geese (83,302 MVP, 87%) (Anderson 1992). The federal harvest estimate indicated that 95,467 Canada geese were harvested statewide (Table 15) (Gamble 1992).

The goose harvest (26,403) in the quota zone was 45,997 geese below the assigned quota. However, the goose harvest in 1991-92 represented the seventh highest harvest since 1966, but success rates were the second lowest since 1974. Failure to achieve the quota can be attributed to a number of factors. For the second consecutive year, unusually warm temperatures and fair weather have plagued goose hunters for the majority of the season. The fall and winter of 1991-92 recorded numerous records for high temperatures. In fact, the winter was classified the warmest on record by average daily temperatures. Large flocks of Canada geese established flight patterns which bypassed commercial hunting clubs in search of flooded cropfields as far as 10-20 miles away from the refuges. Its evident that goose behavior is rapidly changing as a result of increased hunting pressure along their migration route. Behavioral changes include: avoidance of decoys and blinds; bypassing commercial clubs in search of cropfields 10-20 miles away from the refuges; and larger flock sizes during feeding and exercise flights which affords greater safety and survivability. The most

disturbing facet is the later arrival of geese from Wisconsin and upstate Illinois. Recently, goose departure from southern Illinois has occurred late in December or early January prior to the end of goose hunting season. The combination of unusually warm weather, later arrival of geese from Wisconsin and upstate Illinois and early northward winter migrations from the wintering grounds has resulted in reduced harvests and success rates in recent years in the 4-County Quota Zone. Serious consideration should be given to terminating late January hunting in an attempt to reverse the early migrational trend. The traditional harvest distribution is rapidly changing throughout Illinois. Areas which harvested a small number of Canada geese in the past are now approaching harvesting numbers similarly seen in high concentration areas. This will be difficult to accept in traditional areas where the harvest was usually the highest in the state. Significant population increases in the MVP have resulted in substantial increases in the harvest quota assigned to the 4-County Quota Zone. The size of the quota is almost unattainable despite very liberal harvest regulations. The harvest quota precipitates hunter frustration when not achieved. An effort should be made to eliminate publication of a harvest quota in the 4-County Quota Zone. Approximately 36% of the harvest quota was achieved in the 4-County Quota Zones in 1991-92.

The goose harvest in the 4-County Quota Zone was poor for the second consecutive year despite very high expectations associated with the large fall flight forecast. The large proportion of adults in the MVP should provide a fall flight in 1992 equal to or greater than 1991.

LITERATURE CITED

- Anderson, W.L. 1992. Preliminary results of the 1991 Illinois waterfowl hunter survey. Illinois Dept. of Conservation, Waterfowl Program, Unpublished Rpt. 7pp.
- Gamble, K.A. 1992. Preliminary estimates of waterfowl harvest in the Mississippi Flyway during the 1991 hunting season. U.S. Fish and Wildl. Ser. Admin. Rpt. 65pp.
- Thornburg, D. D., and B.L. Estel. 1983. Canada goose harvest and hunter activity in the southern Illinois quota zone during the 1982 season. Illinois Dept. of Conservation, Waterfowl Program. Periodic Rpt. No. 62 6pp.
- Whitton, R.M. 1992. Canada goose harvest and hunter activity in the southern Illinois quota zone during the 1990 season. Illinois Dept. of Conservation, Waterfowl Program. Periodic Rpt. No. 71 7pp.

Table 1. Annual Southern Illinois Quota Zone Goose Season Statistics, 1974-1991.

Year	Quota Size	Season Length	Date Open	Date Closed	Avg. Daily			Hunter Trips	Comm. Clubs	Free Permits
					Harvest	Success Rate	Pop. Peak			
1974	22,000	38	11/25/74	01/01/75	24,673	.49	217,000	49,971	60	230
1975	22,000	30	11/23/75	12/23/75	25,075	.57	180,000	44,310	58	239
1976	22,000	27	11/22/76	12/18/76	25,865	.59	316,000	44,080	61	296
1977	29,000	44	11/21/77	01/03/78	30,747	.53	405,000	57,472	72	347
1978	40,000	69	11/13/78	01/20/79	40,490	.57	253,000	70,983	146	290
1979	29,000	70	11/09/79	01/17/80	29,193	.42	248,000	69,414	137	307
1980	27,000	31	11/03/80	12/03/80	27,835	.68	220,000	40,888	113	332
1981	24,000	50	11/09/81	12/28/81	25,328	.44	180,000	56,964	109	358
1982	17,500	40	11/08/82	12/17/82	17,863	.42	166,000	42,432	106	---
1983	17,500	35	11/14/83	12/18/83	18,164	.44	207,000	41,124	101	---
1984	17,500	25	11/12/84	12/06/84	14,607	.46	272,000	31,515	92	---
1985	17,500	31	11/11/85	12/11/85	21,767	.58	245,000	37,820	89	---
1986	24,000	42	11/17/86	12/28/86	25,858	.51	239,000	50,663	97	---
1987	26,300	50	11/16/87	01/04/88	18,585	.31	492,000	60,804	99	---
1988	37,000	50	11/21/88	01/09/89	39,332	.56	560,000	70,460	95	---
1989	51,750	56	11/20/89	01/14/90	42,254	.54	731,000	78,699	104	---
1990	71,100	70	11/10/90 11/19/90	11/12/90 01/24/91	31,319	.39	540,000	80,885	124	---
1991	72,400	84	11/09/91	01/31/92	26,403	.38	350,000	70,210	127	---

Table 2. Hunter-trips and Harvest of Canada Geese in the Southern Illinois Quota Zone during the 1991 Season.

	Number of Permits Issued	Hunter Trips	Percent By Permit	Percent By Counties	Harvest	Percent By Permit	Percent By Counties	Success Rate
<u>Alexander (Horseshoe Lake)</u>								
Licensed Clubs ^a	42	17,289	92		6,604	94		.38
Other Areas ^b		<u>1,503</u> 18,792	<u>8</u> 100	.27	<u>422</u> 7,026	<u>6</u> 100	.27	<u>.28</u> .37
<u>Union County</u>								
Licensed Clubs ^a	20	11,149	84		5,170	92		.46
Other Areas ^b		<u>2,124</u> 13,273	<u>16</u> 100	.19	<u>480</u> 5,650	<u>8</u> 100	.21	<u>.23</u> .43
<u>Williamson/Jackson (Crab Orchard NWR)</u>								
Licensed Clubs ^a	65	17,928	47		9,266	67		.52
Other Areas ^b		<u>20,217</u> 38,145	<u>53</u> 100	.54	<u>4,461</u> 13,727	<u>33</u> 100	.52	<u>.22</u> .36
<u>Grand Total</u>	127	70,210		100	26,403		100	.38

^aLicensed clubs are those areas that charge a daily fee for hunting and areas covered by lease or other monetary agreement. Number of hunter trips and harvest are reported directly by daily registration of hunters.

^bOther areas represent all other areas where goose hunting occurs. In 1982, the free permit was eliminated and hunters were no longer required to register to hunt on free areas. Number of hunter-trips and harvest were estimated using a 9-year mean percent harvest and percent hunter-trips occurring on free areas in each of the counties in past years.

Table 3. Contribution of Public Hunting Areas to the Hunting Effort and Harvest of Canada Geese during the 1991 Season.

County	Hunter Trips	Percent of County Commercial Club Total	Harvest (%)	Percent of County Commercial Club Total	Success Rate
Alexander ^a	1,005	5.8	164 (08)	2.4	.16
Union ^b	3,571	32.0	1,062 (55)	20.5	.30
Williamson/Jackson ^c	3,049	17.0	711 (37)	7.6	.23
All Counties	7,625	16.4	1,937	9.2	.25

^aHorseshoe Lake Public Hunting Area is a licensed club.

^bUnion County Public Hunting Area is a licensed club.

^cCrab Orchard NWR Public Hunting Area is a licensed club.

Table 4. Comparison of the 1991 Season on the Union County and Horseshoe Lake Public Hunting Areas with the 1990 Season and the 1985-1989, 5-Year Average.

	<u>Union County Public Hunting Area</u>			<u>Horseshoe Lake Public Hunting Area</u>		
	5-Year			5-Year		
	Avg. (85-89)	1990	1991	Avg. (85-89)	1990	1991
Percent of Total County Hunters	19	23	27	8	6	5
Percent of Total County Harvest	15	19	19	4	2	2
Number of Hunters	2,509	3,644	3,571	1,457	1,406	1,005
Average Number Hunters Per Day	67	57	44	40	24	12
Harvest	1,079	1,467	1,062	419	184	164
Success Rate	.43	.40	.30	.20	.13	.16

Table 5. Goose Harvest in the Quota Zone throughout the 1991 Season.

Date	<u>Canada Goose Harvest**</u>				<u>Will./Jackson</u>		*Harvest Per Report Period Geese	*Total Harvest in Quota Zone Geese
	<u>Alexander</u>	<u>Geese</u>	<u>Hunters</u>	<u>Union</u>	<u>Hunters</u>	<u>Geese</u>		
11-15-91	748	172	536	215	1,584	1,363	2,437	2,437
11-22-91	1,223	348	759	361	2,325	1,675	809	3,246
11-29-91	2,103	604	1,294	503	3,439	2,070	1,012	4,258
12-06-91	3,444	1,227	2,084	942	4,644	2,722	2,109	6,367
12-13-91	5,377	2,361	3,236	1,618	6,543	3,914	3,711	10,078
12-20-91	7,365	3,248	4,465	2,342	8,201	4,770	3,003	13,081
12-27-91	9,147	3,920	5,435	2,844	9,725	5,311	2,065	15,146
01-03-92	11,530	4,728	6,874	3,495	11,650	5,938	2,500	17,646
01-10-92	13,309	5,348	8,231	4,022	13,333	6,614	2,237	19,883
01-17-92	14,716	5,708	9,434	4,400	14,852	7,584	2,233	22,116
01-24-92	15,981	6,099	10,285	4,728	16,366	8,444	2,048	24,164
01-31-92	17,289	6,604	11,149	5,170	17,928	9,266	2,239	26,403

*Includes Harvest on Non-Commercial Areas

**Reported Harvest by Commercial Clubs

Table 6. Total Harvest of Canada Geese by County in the Southern Illinois Quota Zone, 1988-1991.

County	1988		1989		1990		1991	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Alexander	12,391	32	13,806	33	7,683	25	7,026	27
Union	8,791	22	9,996	24	7,861	25	5,650	21
Williamson/Jackson	<u>18,150</u>	<u>46</u>	<u>18,452</u>	<u>43</u>	<u>15,775</u>	<u>50</u>	<u>13,727</u>	<u>52</u>
Total:	39,332	100	42,254	100	31,319	100	26,403	100

Table 7. Success Rates for Canada Goose Hunters on Commercial Clubs in the Southern Illinois Quota Zone 1984-1991.

County	1984	1985	1986	1987	1988	1989	1990	1991
Alexander	.54	.60	.56	.31	.62	.59	.35	.38
Union	.53	.64	.69	.31	.66	.71	.54	.46
Williamson/Jackson	.57	.81	.60	.45	.73	.66	.54	.52
All Counties	.55	.67	.61	.36	.67	.65	.46	.45

Table 8. Hunter Use, Harvest and Hunter Success on the Union County Public Hunting Area 1977-1991.

Year	No. Days Hunted	Number Hunters	Average Number Hunters Per Day	Geese Harvested	Success Rate
1977	44	3,045	82	962	.32
1978	69	4,998	83	3,441	.69
1979	70	5,524	81	2,800	.51
1980	31	2,681	86	2,325	.87
1981	47	3,647	78	1,927	.53
1982	34	2,327	68	1,098	.47
1983	35	2,269	76	1,074	.47
1984	21	1,696	81	735	.43
1985	26	2,073	80	969	.47
1986	33	2,628	80	1,052	.40
1987	39	2,446	63	391	.16
1988	39	2,618	65	1,664	.64
1989	45	2,782	62	1,318	.47
1990	64	3,644	57	1,467	.40
1991	81	3,571	44	1,062	.30

Table 9. Hunter Use, Harvest and Hunter Success on the Horseshoe Lake Public Hunting Area 1977-1991.

Year	No. Days Hunted	Number Hunters	Average Number Hunters Per Day	Geese Harvested	Success Rate
1977	44	2,439	66	678	.28
1978	69	3,381	56	1,457	.43
1979	70	2,514	37	434	.17
1980	31	1,427	46	1,194	.84
1981	47	1,986	42	494	.25
1982	34	1,097	32	146	.13
1983	35	1,153	38	374	.32
1984	21	1,070	51	404	.38
1985*	20	806	40	167	.21
1986	33	1,382	42	367	.27
1987	39	1,191	31	196	.16
1988	39	1,714	43	597	.35
1989	45	2,191	49	766	.35
1990*	58	1,406	24	184	.13
1991	81	1,005	12	164	.16

*Horseshoe Lake Public Hunting Area closed due to flooding from Nov. 21-29, 1985 and Jan. 3-8, 1991.

Table 10. Canada Goose Populations on Wintering Areas throughout the Fall and Winter of 1991-92.

Date	*Ballard Co.	Horseshoe Lake	Union Co.	Crab Orchard	Rend Lake	Campbell Pond	Carlyle Lake	Cache River Bottoms	Burning Star Mine	Total
10-15-91	1,500	8,000	9,500	18,000	5,500	600	--	50	500	43,650
10-21-91	1,500	12,000	7,000	22,500	4,000	0	--	0	500	47,500
11-04-91	1,000	9,000	9,000	15,000	5,000	800	--	250	500	40,550
11-13-91	2,000	20,000	9,000	23,000	6,000	800	--	200	---	61,000
11-25-91	4,000	16,000	10,000	23,000	8,000	500	--	250	300	62,050
12-04-91	6,500	20,000	13,500	36,000	15,000	300	--	5,000	1,100	97,400
12-10-91	11,000	68,000	55,000	152,000	165,000	400	850	7,000	5,000	464,250
12-16-91	28,000	78,000	90,000	105,000	145,000	300	19,000	10,500	16,000	491,800
12-24-91	32,000	120,000	90,000	110,000	152,000	3,000	38,000	11,000	27,000	583,000
01-10-92	21,300	50,000	35,000	61,000	15,000	400	84,000	11,000	14,000	299,700 ^a
01-21-92	50,000	145,000	60,000	65,000	45,000	600	13,000	5,500	42,000	442,100 ^b
01-27-92	68,000	125,000	70,000	41,000	60,000	6,000	56,000	2,000	7,000	436,500 ^c
02-05-92	33,000	115,000	50,000	33,000	31,000	200	64,500	4,500	16,000	347,400 ^d

*Includes Swan Lake, KY

^aIncludes Ten Mile Creek - 8,000

^bIncludes Ten Mile Creek 16,000

^cIncludes Ten Mile Creek - 1,500

^dIncludes Ten Mile Creek - 200

Table 11. Age Ratio in the Illinois Canada Goose Harvest during the 1991 Season. Data Gathered from Tail Fans (n=2,652) Collected throughout the Season from Commercial Pickers in Alexander, Union, Williamson and Jackson Counties.

Area	Immatures	Adults	Ratio
Alexander County	757	729	1.04:1
Union County	221	277	0.80:1
Williamson/Jackson Counties	318	350	0.91:1
Total	1,296	1,356	0.95:1

Table 12. Age Ratio in the Canada Goose Harvest (n=1,226) on the Union County and Horseshoe Lake Public Hunting Areas during the 1991 Season.

	Horseshoe Lake P.H.A. Age Ratio/Sample Size (84 Im./80 Ad.)		Union County P.H.A. Age Ratio/Sample Size (625 Im./437 Ad.)	
Nov. 09 ^a	0.0:1	00	4.0:1	04
Nov. 10 - Nov. 16	0.0:1	00	2.5:1	97
Nov. 17 - Dec. 23	0.0:1	00	1.1:1	43
Nov. 24 - Nov. 30	1.0:1	02	0.9:1	31
Dec. 01 - Dec. 07	1.2:1	13	1.1:1	70
Dec. 08 - Dec. 14	0.4:1	11	2.3:1	85
Dec. 15 - Dec. 21	0.4:1	18	2.2:1	140
Jan. 22 - Dec. 28	1.2:1	17	2.1:1	113
Jan. 29 - Jan. 04	1.1:1	35	2.3:1	134
Jan. 05 - Jan. 11	1.0:1	16	0.7:1	77
Jan. 12 - Jan. 18	2.0:1	21	0.7:1	102
Jan. 19 - Jan. 25	0.5:1	9	1.2:1	51
Jan. 26 - Jan. 31	1.2:1	22	0.8:1	115
Total 84-Day Season	1.0:1	164	1.4:1	1,062

^aFirst Day of Hunting
Both areas were closed December 24-26.

Table 13. Age Ratios, Expressed as Immatures Per Adult, Among Canada Geese Harvested on the Horseshoe Lake and Union County Public Hunting Areas, 1966 to 1991.

Year	Horseshoe Lake	Union County
1966	1.1	2.6
1967	0.8	2.6
1968	1.2	2.2
1969	0.9	1.2
1970	0.9	3.4
1971	1.4	2.8
1972	0.8	1.1
1973	0.8	1.6
1974	1.8	2.5
1975	2.6	4.1
1976	2.5	2.7
1977	1.7	1.3
1978	1.2	1.2
1979	---	2.8
1980	3.2	4.5
1981	2.6	2.2
1982	1.3	2.7
1983	1.0	0.9
1984	2.6	3.2
1985	1.7	1.8
1986	1.4	1.3
1987	0.9	1.0
1988	2.0	1.6
1989	1.5	1.2
1990	0.4	0.7
1991	1.0	1.4
Mean	1.49	2.15

Table 14. Total Goose Use Days and Percent Total at 5 Refuges in Southern Illinois and Western Kentucky in 1991-92.

Week	Union County			Horseshoe Lk.			Crab Orchard			Rend Lake			Ballard County			Total		
	Goose Use Days	%	Total	Goose Use Days	%	Total	Goose Use Days	%	Total	Goose Use Days	%	Total	Goose Use Days	%	Total	Goose Use Days	%	Total
10-15-91	66,500		22	56,000		19	130,200		43	38,500		13	10,500		3	301,700		
10-21-91	49,000		15	84,000		26	157,500		48	28,000		9	10,500		3	329,000		
10-28-91*	49,000		15	84,000		26	157,500		48	28,000		9	10,500		3	329,000		
11-04-91	63,000		23	63,000		23	110,600		40	35,000		13	7,000		3	278,600		
11-13-91	63,000		15	140,000		33	166,600		39	42,000		10	14,000		3	425,600		
11-19-91*	63,000		15	140,000		33	166,600		39	42,000		10	14,000		3	425,600		
11-25-91	70,000		16	112,000		26	164,500		38	56,000		13	28,000		7	430,500		
12-04-91	94,500		15	140,000		22	254,100		40	105,000		16	45,500		7	639,100		
12-10-91	385,000		12	476,000		15	1,066,800		34	1,155,000		37	63,000		2	3,145,800		
12-16-91	630,000		20	546,000		18	737,100		24	1,015,000		33	168,000		5	3,096,100		
12-24-91	630,000		18	840,000		24	791,000		23	1,064,000		30	175,000		5	3,500,000		
12-31-91*	630,000		18	840,000		24	791,000		23	1,064,000		30	175,000		5	3,500,000		
01-10-92	245,000		19	350,000		27	429,800		34	105,000		08	147,000		12	1,276,800		
01-16-92*	245,000		19	350,000		27	429,800		34	105,000		08	147,000		12	1,276,800		
01-21-92	420,000		17	1,015,000		40	459,200		18	315,000		13	301,000		12	2,510,200		
01-27-92	490,000		19	875,000		35	329,000		13	420,000		17	420,000		17	2,534,000		
02-05-92	350,000		20	805,000		46	232,400		13	217,000		12	140,000		08	1,744,400		
Total	4,543,000		18	6,916,000		27	6,573,700		26	5,834,500		23	1,876,000		07	25,743,200		

*No Survey Conducted, Values are Same as Previous Week.

Table 15. Canada Goose Harvest in Illinois, 1967-1991.

Statewide Harvest Obj.	Season Lgth. Quota Z./Upstate	4-Co. Quotas (1,000s)	Statewide Harvest		Quota Z. Harvest (1,000s)	Upstate Harvest (1,000s)	
			Fed. Est./State Est. (1,000s)	Fed. Est. / State Est.			
1967	20,000	31	50	16.0 (80) ^a	35.4	20.2 (57) ^b	15.2 (43) ^b
1968	20,000	42	50	16.0 (80)	21.2	21.4 (100)	--- (0)
1969	25,000	30	37	20.0 (80)	29.4	20.3 (69)	9.1 (31)
1970	35,000	44	55	28.0 (80)	37.7	27.5 (73)	10.2 (27)
1971	28,000	38	50	22.0 (80)	34.4	24.6 (72)	9.8 (28)
1972	28,000	52	70	22.0 (80)	33.7	15.8 (47)	17.9 (53)
1973	28,000	63	70	24.0 (85)	28.5	22.9 (80)	5.6 (20)
1974	28,000	38	70	22.0 (80)	47.1	24.7 (52)	22.4 (48)
1975	28,000	30	70	22.0 (80)	44.8	25.1 (56)	19.7 (44)
1976	28,000	27	70	22.0 (80)	53.7	25.9 (48)	27.8 (52)
1977	35,000	44	70	29.0 (80)	76.6	30.7 (40)	45.9 (60)
1978	50,000	69	70	40.0 (80)	118.7	40.5 (34)	78.2 (66)
1979	35,000	70	70	29.0 (80)	69.0	29.2 (42)	39.8 (58)
1980	33,000	31	70	27.0 (80)	57.7	27.8 (48)	29.9 (52)
1981	30,000	50	50	24.0 (80)	51.5	25.3 (49)	26.2 (51)
1982	27,000	40	40	17.5 (65)	27.2	17.9 (66)	9.3 (34)
1983	27,000	35	40	17.5 (65)	38.8	18.2 (44)	23.4 (56)
1984	27,000	25	20	17.5 (65)	31.0	14.6 (47)	16.4 (53)
1985	27,000	31	20	17.5 (65)	36.9	21.8 (59)	15.1 (41)
1986	48,000	42	40	24.0 (50)	48.9	25.9 (53)	23.0 (47)
1987	52,500	50	40	26.3 (50)	45.7	18.6 (41)	27.1 (59)
1988	74,000	50	50	37.0 (50)	91.0	39.3 (43)	51.7 (57)
1989	103,500	56	60	51.7 (50)	95.6	42.3 (44)	53.3 (56)
1990	142,200	70	70	71.1 (50)	93.7	31.3 (33)	62.4 (67)
1991	144,800	84	90	72.4 (50)	95.4	26.4 (28)	69.0 (72)
						44.3	19.0 (42) ^c
						29.6	11.7 (40)
						31.4	13.2 (42)
						23.1	8.5 (37)
						37.4	15.6 (42)
						47.2	21.4 (45)
						36.1	17.5 (48)
						74.8	33.2 (44)
						94.3	49.1 (52)
						70.0	38.7 (55)
						95.7	69.3 (72)

^a Percent of Statewide Harvest Objective

^b Percent of Federal Estimate of Statewide Harvest

^c Percent of State Estimate of Statewide Harvest

1966-1973 Average Percent of Statewide Harvest Occurring Upstate - 29%

1974-1981 Average Percent of Statewide Harvest Occurring Upstate - 54%

1982-1985 Average Percent of Statewide Harvest Occurring Upstate - 48%

1986-1989 Average Percent of Statewide Harvest Occurring Upstate - 55%

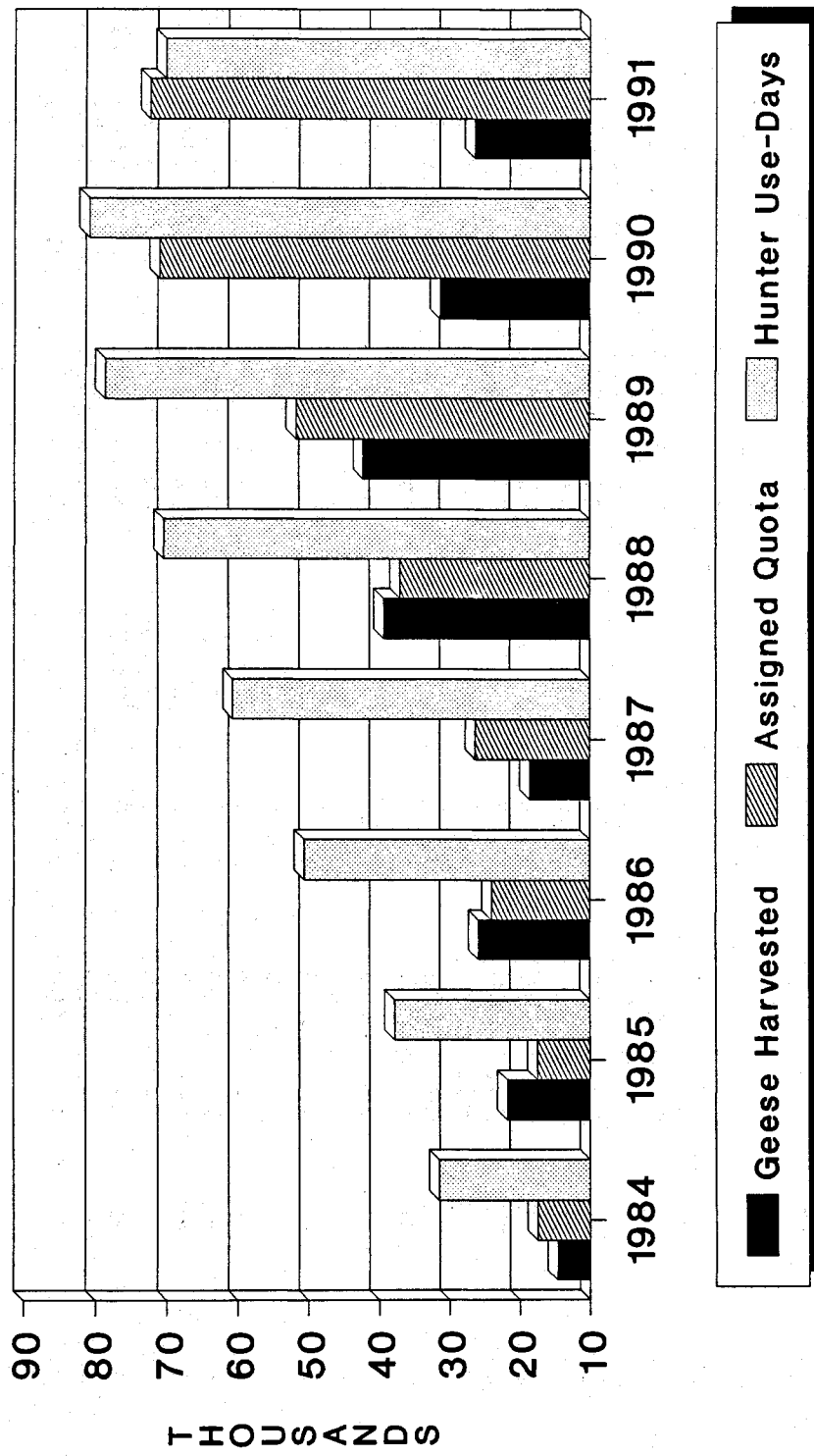


Figure 1. Number of geese harvested, assigned quota and number of hunters in the 4 County Quota Zone from 1984-1991.

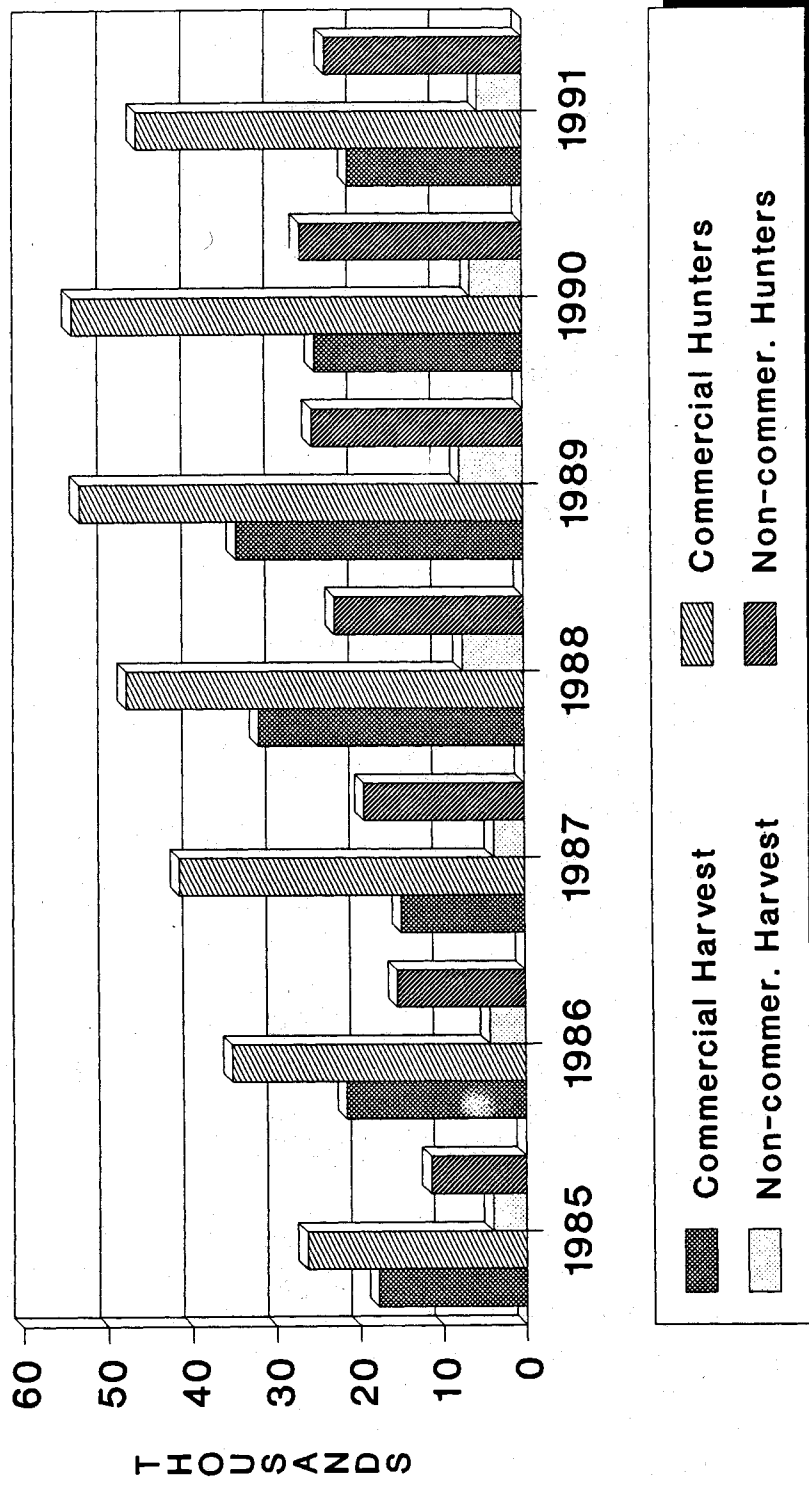


Figure 2. Number of commercial and non-commercial hunters and goose harvest from 1985-1991.

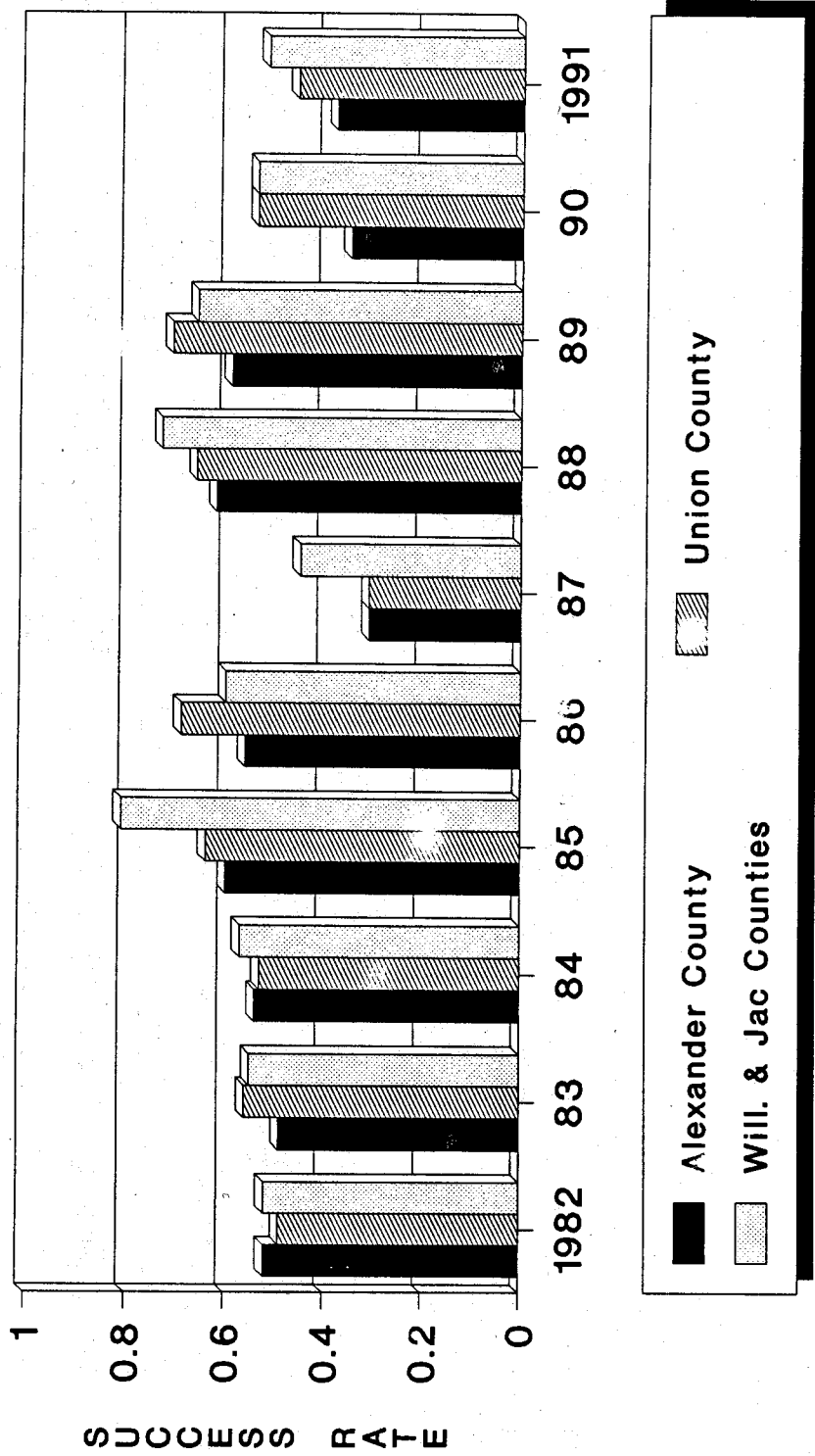


Figure 3. Success rates for Canada goose hunters on commercial clubs in the Southern Illinois Quota Zone, 1982-1991.

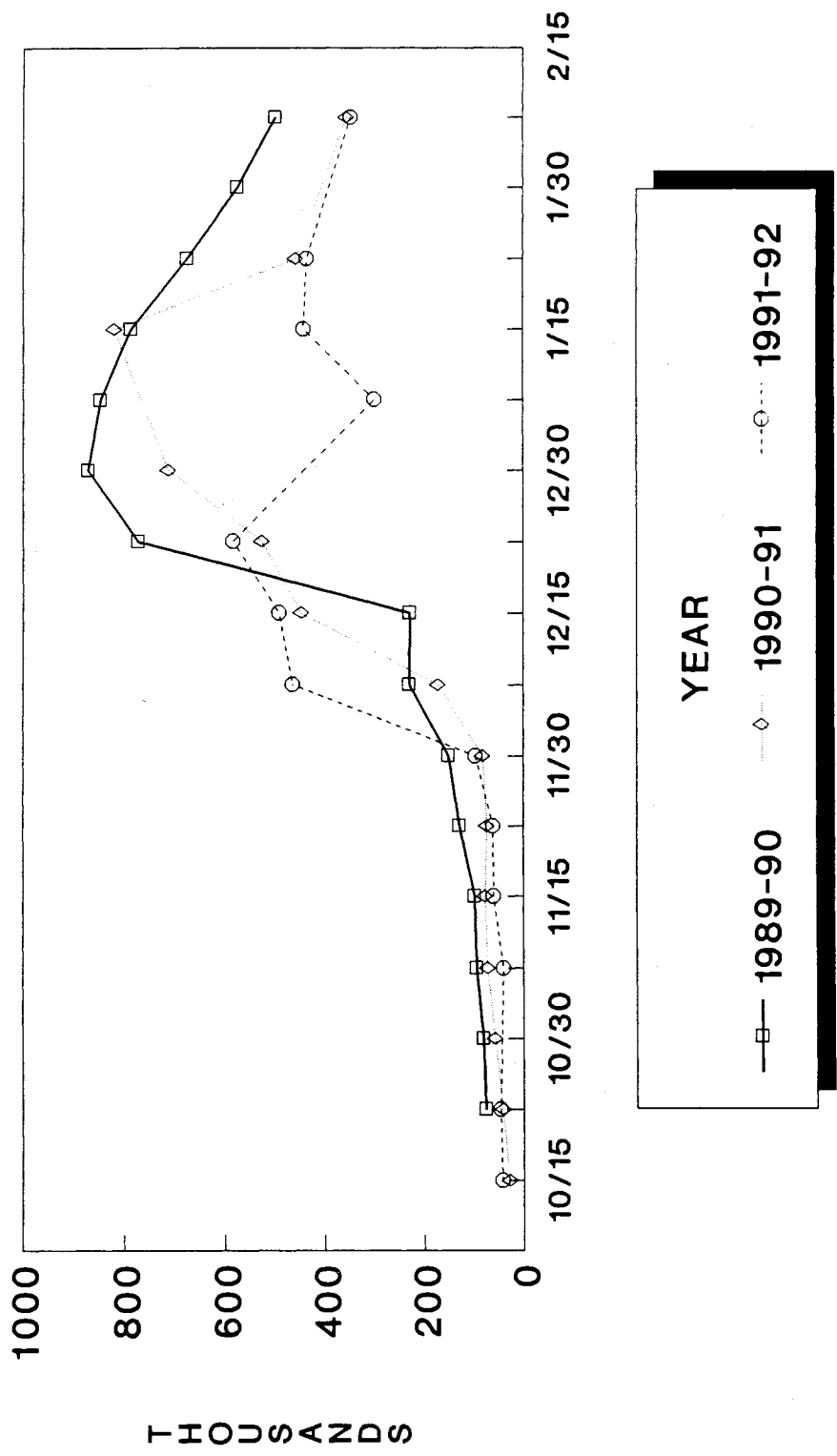


Figure 4. Number of Canada Geese in Southern Illinois and Western Kentucky during Fall and Winter, 1989-1992.

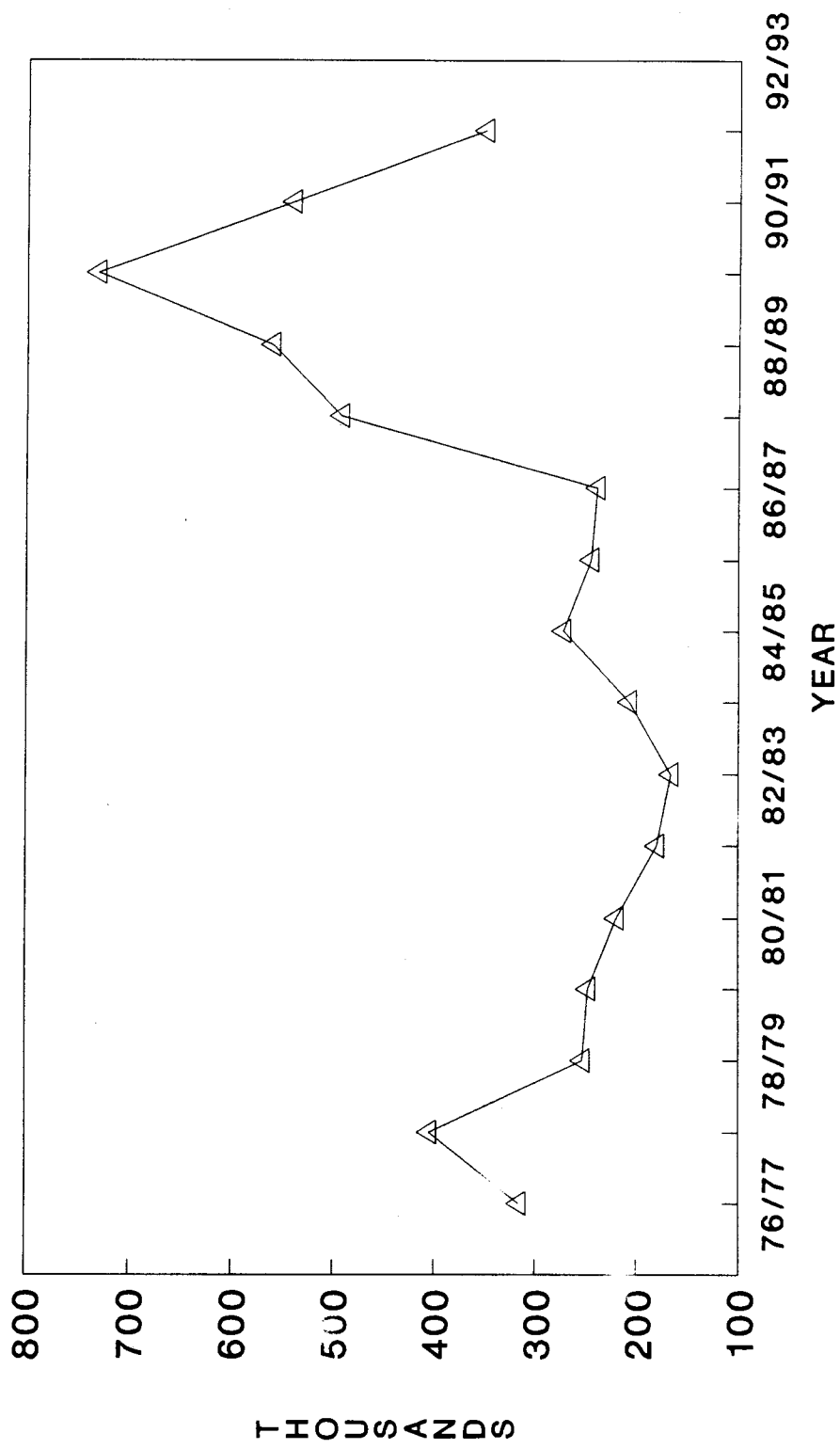


Figure 5. Peak populations of Canada Geese in the Southern Illinois Quota Zone, 1976-1992.

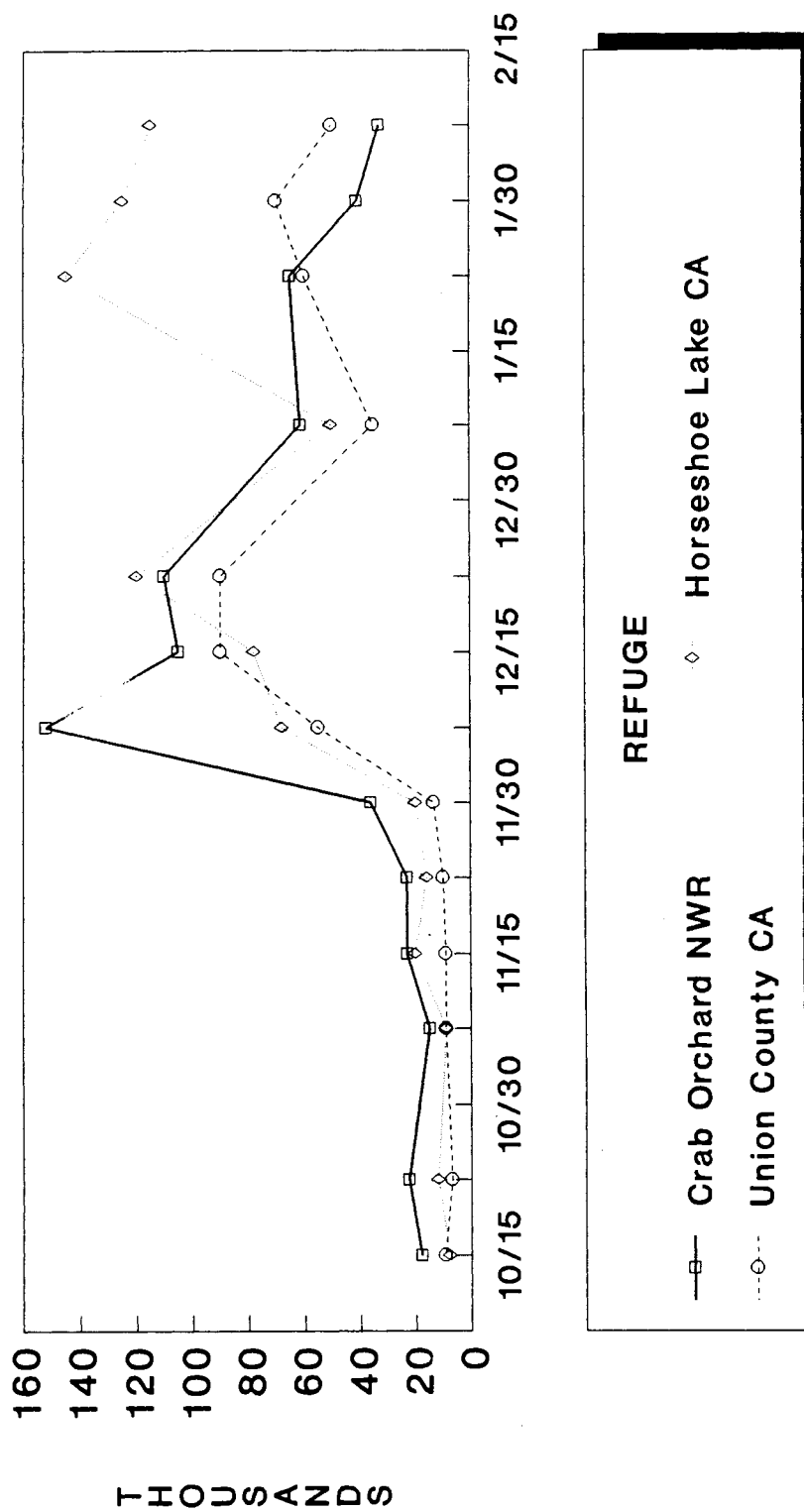


Figure 6. Numbers of Canada Geese on Three Refuges in the Southern Illinois Quota Zone During Fall and Winter, 1991.